

ABSTRACT

A memory cell for an electrically writeable and erasable memory medium as well as a memory medium thereof is provided. The memory cell comprises a data recording element, the data recording element has a plurality of multiple-layer structure disposed one on top of another; each the multiple-layer structure comprising a plurality of sequentially disposed individual layers. At least one of the plurality of individual layers is capable of changing phase between a crystalline state and an amorphous state in response to an electrical pulse, one of the plurality of individual layers having at least one atomic element which is absent from other one of the plurality of individual layers, and the plurality of multiple-layer structure is of a superlattice-like structure to lower a heat diffusion out of the data recording element to shorten a phase change time of the respective individual layers.